

AMENDMENT

(Amendment under Article 11 of the Law)

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To: Examiner of the Patent Office

1. International Application No. : PCT/JP03/11017

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4. Object of Amendment:

Specification and Claim

5. Contents of Amendment

(1) "TRANSMISSION SIGNAL PRODUCTION METHOD, COMMUNICATION METHOD, AND DATA STRUCTURE OF TRANSMISSION SIGNAL" from the 3rd line to the 4th line in page 1 of the specification is amended to "COMMUNICATION METHOD".

(2) "a transmission signal production method, a communication method using the transmission signal, and a data structure of the transmission signal" from the 8th line to the 11th line in page 1 of the specification is amended to "a communication method".

(3) "A transmission signal production method according to the present invention ..... is used as a transmission signal." from the 16th line to the 24th line in page 4 of the specification is amended to "A communication method according to the present invention comprises the steps of:

producing a plurality of transmission data sequences

$S_{A,X} = (x_0A, 0...0, x_1A, 0...0, x_2A, 0...0, ..., x_{m-1}A, 0...0)$

$S_{B,Y} = (y_0B, 0...0, y_1B, 0...0, y_2B, 0...0, ..., y_{m-1}B, 0...0)$

(0 indicates a null time of a unit length where no signal is generated)

using a plurality of data sequences

$A = (a_0a_1...a_{N-1}), B = (b_0b_1...b_{N-1}), ...$  and

a plurality of coefficient sequences

$X = (x_0x_1...x_{m-1}), Y = (y_0y_1...y_{m-1}), ...$ ; and

transmitting said plurality of transmission data sequences  $S_{A,X}, S_{B,Y}, ...$  onto the same transmission line at the same time."

(4) "transmission data" in the 25th, 28-29th, 29-30th lines in page 4, and the 4-5th, 7th lines in page 5 of the specification is amended to "data sequence".

(5) "the transmission data is multiplied ..... are arranged alternately." from the 30th line in page 4 to the 2nd line in page 5 of the specification is amended to "data sequences, the data sequence is multiplied by the coefficients of the predetermined coefficient sequence, and a null time of a predetermined length is placed between data sequences."

(6) "a predetermined number of ..... between neighboring transmission data." in the 8-9th lines in page 5 of the specification is amended to "a null time of a predetermined length is arranged between data sequences."

(7) "transmission data" in the 3rd, 12th lines in page 6 of the specification is amended to "data sequence".

(8) "a predetermined number of 0 data are added to ..... to produce the transmission data sequence" from the 11th line to the 19th line in page 5 of the specification is amended to "a null time of a predetermined length is added to the end of the data sequence,

the data sequence to which the null time is added is multiplied by the coefficients of the predetermined coefficient sequence to produce the plurality of data sequences, and the plurality of data sequences are arranged in order of coefficients of the coefficient sequence to produce the transmission data sequence".

(9) "the transmission data is .....to produce the transmission data sequence." from the 19th line to the 27th line in page 5 of the specification is amended to "the data sequence is multiplied by the coefficients of the predetermined coefficient sequence to produce the plurality of data sequences, a null time of a predetermined length is added to the end of each data sequence, produced by multiplying the data sequence by the coefficients, and the data sequences, to which the null time of a predetermined length is added, are arranged in order of coefficients of the coefficient sequence to produce the transmission data sequence."

(10) "transmitting the transmission data sequence .....for producing the transmission data sequence." from the 21st line to the 26th line in page 6 of the specification is amended to "producing a plurality of transmission data sequences for a plurality of data sequences using coefficient sequences different for each data sequence; transmitting the plurality of transmission data sequences; receiving the transmitted transmission data sequences as a reception signal; and restoring the plurality of transmission data sequences by passing the reception signal through matched filters corresponding to said coefficient sequences."

(11) The 21st line to the 29th line in page 7 of the specification are deleted.

(12) "transmission data" in the 9th, 10th lines in page 8 of the specification is amended to "data sequence".

(13) "A transmission signal production, a communication method, and the data structure of a transmission signal" from the 31st line in page 8 to the 1st line in page 9 of the specification is amended to "A communication method".

(14) "a transmission signal production method of the present invention and the data structure of a transmission signal of

the present invention" from the 6th line to the 9th line in page 9 of the specification is amended to "a transmission data sequence".

(15) "transmission data" in the 11-12th, 18th, 19th, 22nd, 26th and 31st lines in page 10 of the specification is amended to "data sequence".

(16) "transmission data" in the 4th, 10th, 11th, 16th, 21st, 22nd, and 26th lines in page 10 of the specification is amended to "data sequence".

(17) "a predetermined number of 0 data" in the 3rd line in page 10 of the specification is amended to "a null time of a predetermined length".

(18) "an interval of time corresponding to" in the 13-14 lines in page 10 of the specification is amended to "an interval of null time corresponding to".

(19) "0 data" in the 20th, 24th, and 31st lines in page 10 of the specification is amended to "null time".

(20) "transmission data" in the 16th, 20th, 21st, 23rd, 27th and 30th lines in page 11 of the specification is amended to "data sequence".

(21) "a predetermined number of 0 data" in the 18-19th lines in page 11 of the specification is amended to "a null time of a predetermined length".

(22)(23) "0 data" in the 7th and the 13th lines in page 12 of the specification is amended to "a null time".

(24) "transmission data" in the 2nd, 7th, 8th, 10th, 15th, 27th and 30th lines in page 12 of the specification is amended to "data sequence".

(25) "transmission data" in the 26th line in page 13 of the specification is amended to "data sequences".

(26) "a finite number of data sequences of transmission data" in the 29-30th lines in page 13 of the specification is amended to "a finite number of data sequences".

(27) "a finite number of transmission data" in the 14-15th lines in page 15 of the specification is amended to "a finite number of data sequences".

(28) "transmission signal production method, ..... the data structure of the transmission signal" from the 25th line to the 27th line in page 19 of the specification is amended to "communication method".

(29) "advantageous and are useful for" in the 28th line in page 19 of the specification is amended to "advantageous to and useful for".

(30) "A transmission signal production method ..... a transmission signal." in claim 1 in page 20 of the claim is amended to

"A communication method comprising the steps of:

producing a plurality of transmission data sequences

$S_{A,X} = (x_0A, 0...0, x_1A, 0...0, x_2A, 0...0, ..., x_{m-1}A, 0...0)$

$S_{B,Y} = (y_0B, 0...0, y_1B, 0...0, y_2B, 0...0, ..., y_{m-1}B, 0...0)$

...

(0 indicates a null time of a unit length where no signal is generated)

using a plurality of data sequences

$A = (a_0a_1...a_{N-1}), B = (b_0b_1...b_{N-1}), ...$  and

a plurality of coefficient sequences

$X = (x_0x_1...x_{m-1}), Y = (y_0y_1...y_{m-1}), ...$ ; and

transmitting said plurality of transmission data sequences  $S_{A,X}, S_{B,Y}, ...$  onto the same transmission line at the same time."

(31) "The transmission signal production method ..... between neighboring transmission data." in claim 2 in page 20 of the claim is amended to "A communication method comprising the steps of:

producing a plurality of transmission data sequences for a plurality of data sequences using coefficient sequences different for each data sequence;

transmitting said plurality of transmission data sequences;

receiving said transmitted transmission data sequences as a reception signal; and

restoring said plurality of data sequences by passing said reception signal through matched filters corresponding to said

coefficient sequences."

(32) Claim 3 in page 20 of the claim is deleted.

(33) "The transmission signal production method ..... a non-periodic cross-correlation function is 0." in claim 4 in pages 20-21 of the claim is amended to "The communication method according to claim 1 or 2 wherein, in an arbitrary combination of said plurality of transmission data sequences, a finite number of transmission data sequences in the transmission data sequences have a range in which a non-periodic cross-correlation function is 0."

(34) Claim 5 in page 21 of the claim is deleted.

(35) "The transmission signal production method ..... is produced from a unitary matrix." in claim 6 in page 21 of the claim is amended to "The communication method according to one of claims 1, 2, and 4 wherein said coefficient sequences are each formed by a unitary matrix."

(36) Claim 7 in page 21 of the claim is deleted.

(37) "The communication method..... multi-path characteristics of a transmission path." in claim 8 in page 21 of the claim is amended to "The communication method according to one of claims 1, 2, 4, and 6 wherein at least one transmission data sequence selected from said transmission data sequences is used as a pilot signal for measuring multi-path characteristics, and

said pilot signal included in the transmission data sequences received via a transmission line has the multi-path characteristics of the transmission line."

(38) "finding multi-path characteristics..... to produce the transmission data." in claim 9 in pages 21-22 of the claim is amended to "finding multi-path characteristics from the reception signal of the pilot signal included in the transmission data sequences received via a transmission line; and

producing the transmission data sequences obtained by removing the multi-path characteristics from the reception signal using the multi-path characteristics which are found.

"

(39) Claim 10 in page 22 of the claim is deleted.

(40) Claim 11 in page 22 of the claim is deleted.

6. List of Attached Documents